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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/799,773

03/15/2004

Yoshihisa Murohashi

0124/0024

8626

21395 7590 07/17/2008

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EXAMINER

OLANIRAN, FATIMAT O

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

07/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,773	<b>Applicant(s)</b> MUROHASHI ET AL.	
	<b>Examiner</b> FATIMAT O. OLANIRAN	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/25/2008</u> .                                               | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection based on examiner's new prior art.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 5-8 are directed towards non-statutory subject matter. Claims 5-8 claim “a computer program in a computer readable medium ...” However, the claims do not define a *computer-program product* to be a functional descriptive material encoded on a memory/disk/computer-readable medium, see Applicant 's specification, and is thus non-statutory for that reason (i.e., “When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized”). Moreover, a “Computer program” is neither a process (“action”), nor machine, nor manufacture, nor composition of matter (i.e., tangible “thing”) and therefore non-statutory.

Because the full scope of the claim as properly read in light of the disclosure encompasses non-statutory subject matter, the claim as a whole is non-statutory, under the present USPTO Interim Guidelines, 1300 Official Gazette Patent and Trademark Office 142 (Nov. 22, 2005).

In addition claims 6-8 claim, "A computer program for setting a sound..."

Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokkosoulis et al. (6118880) in view of Bharitkar et al. (20030235318).

Claim 1, Kokkosoulis discloses a method of setting a sound field (col. 1 line 46-48) generated when audio signals of plural channels which are outputted from an audio signal reproducing apparatus are reproduced from loudspeakers of the respective channels, (col. 1 line 53-59) the method comprising the steps of; capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59); detecting and comparing volume levels at predetermined points of the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating volume adjusting data of the audio signals Of the respective channels; and controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively (col. 1 line 64-67).

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Kokkosoulis does not explicitly disclose cutting off the feed of the audio signals from the audio signal reproducing apparatus to the loudspeakers of the respective channels.

However it would be obvious to one of ordinary skill in the art at the time the invention was made that in order to calibrate the loudspeaker system any audio player would be muted or disconnected.

Kokkosoulis does not disclose capturing a clap test signal generated by a listener at a listening point by the loudspeakers of the respective channels as sound pickup data.

However Kokkosoulis discloses capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Claim 2 analyzed with respect to claim 1, Kokkosoulis discloses detecting and comparing timings of the data values at the predetermined points of

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the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating delay time setting data of the audio signals of the respective channels (col. 4 line 47-67); and controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively (col. 5 line 22-26).

Claim 3 analyzed with respect to claim 1, Kokkosoulis discloses wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

Claim 4 analyzed with respect to claim 1-2, Kokkosoulis discloses wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

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Claim 5 Kokkosoulis discloses a method of setting a sound field (col. 1 line 46-48) generated when audio signals of plural channels which are outputted from an audio signal reproducing apparatus are reproduced from loudspeakers of the respective channels, (col. 1 line 53-59) the method comprising the steps of; capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59); detecting and comparing volume levels at predetermined points of the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating volume adjusting data of the audio signals Of the respective channels; and controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively (col. 1 line 64-67).

Kokkosoulis does not explicitly disclose cutting off the feed of the audio signals from the audio signal reproducing apparatus to the loudspeakers of the respective channels.

However it would be obvious to one of ordinary skill in the art at the time the invention was made that in order to calibrate the loudspeaker system any audio player would be muted or disconnected.

Kokkosoulis does not explicitly disclose a computer program in a computer readable medium.

However Kokkosoulis discloses a transmit/receive remote control, It would be obvious to one of ordinary skilled in the art at the time the invention was made that this is an embedded system and would therefore have a program on a processor. Furthermore it

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would be obvious to one of ordinary skill in the art at the time the invention was made to process the audio signals of the setting system with a processor in order to have a fast and easily implemented method.

Kokkosoulis does not disclose capturing a clap test signal generated by a listener at a listening point by the loudspeakers of the respective channels as sound pickup data.

However Kokkosoulis discloses capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Claim 6 analyzed with respect to claim 5, Kokkosoulis discloses detecting and comparing timings of the data values at the predetermined points of the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating delay time setting data of the audio signals of the respective channels (col. 4 line 47-

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67); and controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively (col. 5 line 22-26).

Claim 7 analyzed with respect to claim 5 Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

Claim 8 analyzed with respect to claim 5-6, Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

Claim 9 Kokkosoulis disclose an audio reproducing apparatus provided with a system for setting a sound field (col. 1 line 46-48) generated when audio signals of plural channels which are outputted from the audio reproducing apparatus are reproduced from loudspeakers of the respective channels, (col. 1 line 53-59) the audio reproducing apparatus comprising:

means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

a detector for detecting volume levels at predetermined points of the sound pickup data

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captured by the loudspeakers of the respective channels;  
a generator for comparing the detected volume levels, and thereby generating volume adjusting data of the audio signals of the respective channels; and  
a controller for controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively (col. 1 line 64-67 and col. 3 line 24-30 and col. 5 line 22-27).

Kokkosoulis does not explicitly disclose means for cutting off the feed of the audio signals from the audio signal reproducing apparatus to the loudspeakers of the respective channels.

However it would be obvious to one of ordinary skill in the art at the time the invention was made that in order to calibrate the loudspeaker system any audio player would be muted or disconnected.

Kokkosoulis does not disclose means for capturing a clap test signal generated by a listener at a listening point by the loudspeakers of the respective channels as sound pickup data.

However Kokkosoulis discloses means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Claim 10 analyzed with respect to claim 9 Kokkosoulis disclose a detector for detecting timings of the data values at the predetermined points of the sound pickup data captured by the loudspeakers of the respective channels; a generator for comparing the detected timings of the data values, and thereby generating delay time setting data of the audio signals of the respective channels (col. 4 line 47-67); and a controller for controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively (col. 5 line 22-26).

Claim 11 analyzed with respect to claim 9, Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

Claim 12 analyzed with respect to claim 9-10, Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

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Claim 13 sound-field setting system Kokkosoulis disclose loudspeakers of plural channels (col. 1 line 46-48);

means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

a detector for detecting volume levels at predetermined points of the sound pickup data captured by the loudspeakers of the respective channels;

a generator for comparing the detected volume levels, and thereby generating volume adjusting data of the audio signals of the respective channels; and

a controller for controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively (col. 1 line 64-67 and col. 3 line 24-30 and col. 5 line 22-27).

Kokkosoulis does not explicitly disclose means for cutting off the feed of the audio signals from the audio signal reproducing apparatus to the loudspeakers of the respective channels.

However it would be obvious to one of ordinary skill in the art at the time the invention was made that in order to calibrate the loudspeaker system any audio player would be muted or disconnected.

Kokkosoulis does not disclose means for capturing a clap test signal generated by a listener at a listening point by the loudspeakers of the respective channels as sound pickup data.

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However Kokkosoulis discloses means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Claim 14 analyzed with respect to claim 13, Kokkosoulis disclose a detector for detecting timings of the data values at the predetermined points of the sound pickup data captured by the loudspeakers of the respective channels; a generator for comparing the detected timings of the data values, and thereby generating delay time setting data of the audio signals of the respective channels (col. 4 line 47-67); and a controller for controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively (col. 5 line 22-26).

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Claim 15 analyzed with respect to claim 13, Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

Claim 16 analyzed with respect to claim 13, Kokkosoulis disclose wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs (col. 4 line 37-45).

6. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokkosoulis et al. (61188880) in view of Bharitkar et al. (20030235318) in further view of Gu 6968065 in further view of Shiraishi (6954538).

Claim 17, Kokkosoulis disclose a sound-field setting system comprising:

loudspeakers of plural channels (col. 1 line 46-48);

first means for using the loudspeakers as receivers to convert a radio signal into generated by a listener at a desired listening point into corresponding electric signals respectively (col. 1 line 55-59);

second means for detecting flight time of the electric signals generated by the loudspeakers;

third means for setting desired gains for input audio signals of the plural channels in response to the flight time detected by the second means (col. 4 line 37-67);

fourth means for amplifying the input audio signals at the desired gains set by the third

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means to generate amplified audio signals respectively (col. 5 line 22-27); and fifth means for feeding the amplified audio signals generated by the fourth means to the loudspeakers respectively (col. 2 line 53-60).

Kokkosoulis does not disclose using the loudspeakers as microphones to convert a clap generated by a listener at a desired listening point into corresponding electric signals respectively and second means for detecting amplitude of the electric signals generated by the loudspeakers; third means for setting desired gains for input audio signals of the plural channels in response to the amplitude detected by the second means

However Kokkosoulis discloses means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Kokkosoulis in view of Bharitkar does not disclose using the loudspeakers as microphones.

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Gu discloses using the loudspeakers as microphones (col. 2 line 37-40). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to use the loudspeakers of Kokkosoulis as microphones in order to reduce the number of components of the audio test system while trying various input test signals.

Kokkosoulis in view of Bharitkar in further view of Gu do not disclose second means for detecting amplitude of the electric signals generated by the loudspeakers; third means for setting desired gains for input audio signals of the plural channels in response to the amplitude detected by the second means

Shiraishi discloses means for detecting amplitude of the electric signals generated by the loudspeakers; means for setting desired gains for input audio signals of the plural channels in response to the amplitude detected (col. 6 line 42-63).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the setting system of Kokkosoulis with the amplitude adjustment and analysis method of Shiraishi in order to provide amplitude adjustment based on an acoustic test signal.

Claim 20 analyzed with respect to claim 19 Kokkosoulis in view of Bharitkar and Gu disclose means for amplifying the input audio signals at the desired gains set to generate amplified audio signals respectively; and means for feeding the amplified audio signals generated to the loudspeakers respectively (Kokkosoulis col. 5 line 22-27 and col. 2 line 53-60)

Kokkosoulis in view of Bharitkar and Gu do not disclose

sixth means for detecting amplitudes of the electric signals generated by the loudspeakers; seventh means for setting desired gains for the input audio signals in response to the amplitudes detected by the sixth means;

Shiraishi discloses means for detecting amplitudes of the electric signals generated by the

loudspeakers; means for setting desired gains for the input audio signals in response to the amplitudes detected (col. 6 line 42-63).

Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the setting system of Kokkosoulis with the amplitude adjustment and analysis method of Shiraishi in order to provide amplitude adjustment based on an acoustic test signal.

7. Claim 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokkosoulis et al. (61188880) in view of Bharitkar et al. (20030235318) in further view of Gu 6968065.

Claim 18, Kokkosoulis discloses sound-field setting system comprising: loudspeakers of plural channels (col. 1 line 46-48); first means for using the loudspeakers as receivers to convert a radio signal into generated by a listener at a desired listening point into corresponding electric signals respectively (col. 1 line 55-59); second means for detecting moments of arrival of the test sound at the loudspeakers in response to the electric signals generated by the loudspeakers respectively (col. 4 line

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37-67); third means for delaying input audio signals by delay times depending on the moments detected by the second means to generate delayed audio signals respectively (col. 4 line 37-67); and fourth means for feeding the delayed audio signals to the loudspeakers respectively (col. 5 line 22-27).

Kokkosoulis does not disclose first means for using the loudspeakers as microphones to convert a clap generated by a listener at a desired listening point into corresponding electric signals respectively;

However Kokkosoulis discloses means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Kokkosoulis in view of Bharitkar does not disclose using the loudspeakers as microphones.

Gu discloses using the loudspeakers as microphones (col. 2 line 37-40). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to

use the loudspeakers of Kokkosoulis as microphones in order to reduce the number of components of the audio test system while trying various input test signals.

Claim 19, Kokkosoulis discloses sound-field setting system comprising: loudspeakers of plural channels (col. 1 line 46-48); first means for using the loudspeakers as receivers to convert a radio signal into generated by a listener at a desired listening point into corresponding electric signals respectively (col. 1 line 55-59); second means for detecting moments of arrival of the test sound at the loudspeakers in response to the electric signals generated by the loudspeakers respectively (col. 4 line 37-67); third means for setting desired delay times for input audio signals of the plural channels in response to the moments detected by the second means (col. 4 line 37-67); fourth means for delaying the input audio signals by the desired delay times set by the third means to generate delayed audio signals respectively; and fifth means for feeding the delayed audio signals to the loudspeakers respectively (col. 5 line 22-27 and col. 2 line 53-60).

Kokkosoulis does not disclose first means for using the loudspeakers as microphones to convert a clap generated by a listener at a desired listening point into corresponding electric signals respectively;

However Kokkosoulis discloses means for capturing a test signal generated by a listener at a listening point by the loudspeakers of the respective channels as radio pickup data (col. 1 line 55-59);

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It is well known to use a test tone, impulse or test signal in order to obtain sound setting information about a system.

Bharitkar discloses various types of test signals (paragraph 45 line 6-11).

Furthermore, a clap is a kind of impulse, therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to try various stimulus signals in order to discover the best stimulus for a particular system.

Kokkosoulis in view of Bharitkar does not disclose using the loudspeakers as microphones.

Gu discloses using the loudspeakers as microphones (col. 2 line 37-40). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to use the loudspeakers of Kokkosoulis as microphones in order to reduce the number of components of the audio test system while trying various input test signals.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FATIMAT O. OLANIRAN whose telephone number is (571)270-3437. The examiner can normally be reached on M-F 10:00-6 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FO

/Vivian Chin/  
Supervisory Patent Examiner, Art Unit 2615